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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,803	12/28/2001	Harry P. Finke	28-011564	7934

7590 09/23/2003

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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,803

Applicant(s)

FINKE ET AL.

Examiner

Josiah C. Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings filed with the application on 12/28/01 are accepted by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 5-12, and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Schlitt* (US # 2,250,680) in view of *Kurzinski* (US # 5,145,361).

Schlitt discloses in Figures 1-3 a burner for non-symmetrical combustion and method of combustion substantially as described in applicant's claims 1, 5-12, and 15-25 including a burner housing (10) enclosing a burner plenum, a fuel conduit (22 and 24) extending longitudinally and positioned co-axial with a line spaced from a central axis of the burner, a baffle (15) defining an air conduit (13), and a burner port portion/block burner (unnumbered exit of burner head 11).

Schlitt further discloses that the air conduit has a cross-sectional shape in the form of a segment of a circle defined by a chord (see Fig. 2) and the burning housing (10) forms a cylindrical cavity receiving the fuel and air for combustion.

Schlitt does not disclose at least one oxygen lance, or a plurality of oxygen lances, extending longitudinally within the housing and partially through the air conduit and possibly does not disclose the use of diverter valves for controlling gas flow.

Kurzinski teaches a burner assembly in the same field of endeavor as *Schlitt* wherein the assembly of *Kurzinski* includes the use of an oxygen lance (22) within an air conduit for supplying an air-oxygen mixture for combustion with a fuel (see Fig. 4). *Kurzinski* further disclose the use of valves or regulators to control feed flows (see col. 3, lines 41-50).

In regard to the limitations of the claims concerning a plurality of oxygen lances, to have selected a plurality of lances is regarded as simply duplicating the known oxygen lance (22) of *Kurzinski* and is not regarded as patentably distinct (see MPEP § 2144.04 (VI.)(B.)).

Therefore, in regard to claims 1, 5-12, and 15-25, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the burner assembly of *Schlitt*; to incorporate the oxygen lance of *Kurzinski* for the desirable purpose of aspirating a flow of ambient air into the burner to obtain a desired oxygen-air-fuel ratio (see *Kurzinski*, col. 6,

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lines 16-49), and to incorporate the valves of *Kurzinski* as such valves are conventional in the art and are used when desired to controlling flow and pressure of the feed flows (see *Kurzinski*, col. 3, lines 41-51).

5. Claims 2-4, 13, 14, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Schlitt* in view of *Kurzinski* as applied to the claims above, and further in view of *Morimoto et al.* (US # 4,515,553) and *Robertson et al.* (US # 5,407,345).

Schlitt in view of *Kurzinski* discloses all the limitations of claims 2-4, 13, 14, and 26-30 except for a burner port block with diverging sidewall, specifically an angle range of between 2 and 30 degrees, auxiliary fuel conduits with openings radially spaced from the fuel exit and coterminous with the burner port block and a method step of recirculating products of combustion into the discharging combustion gas containing dispersed oxygen.

Morimoto et al. teaches a burner in the same field of endeavor as *Schlitt* wherein the burner of *Morimoto et al.* includes a burner block portion (6) with diverging sidewalls (see Fig. 1) wherein the angle of divergence is set in the range of 0 to 90 degrees (see col. 2, lines 42-44).

Robertson et al. teaches a burner in the same field of endeavor as *Schlitt* wherein the burner of *Robertson et al.* includes multiple auxiliary fuel conduits (10) with an exit co-terminus with a burner block port (see Fig. 1 and col. 8, lines 33-41). *Robertson et al.* also teaches that the burner is arranged to provide recirculation of combustion products back to a fuel and oxidant mix (see col. 6, lines 17-45).

Therefore, in regard to claims 2-4, 13, 14, and 26-30, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the burner and

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method of combustion of *Schlitt*: to incorporate the diverging sidewalls of *Morimoto et al.* for the desirable purpose of ensure quick and uniform mixing and rapid combustion of the supplied fuel and air (see *Morimoto et al.*, col. 2, lines 42-49), and to incorporate the auxiliary fuel conduits and combustion product recirculation of *Robertson et al.* as the auxiliary fuel conduits serve to distribute fuel uniformly to give the visible flame balance and consistency (see *Robertson et al.*, col. 8, lines 39-42) and the recirculation aids in developing and sustaining ignition and causes thermal stabilization of the fuel and oxidant mix (see *Robertson et al.*, col. 6, lines 17-22).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. *Beggs, Nakamachi et al., Irwin et al., Iatrides et al.*, and EP 0 040 526 are included to further show the state of the art concerning non-symmetrical combustion and burner block structure.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett, can be reached at (703) 308-0101. The fax phone numbers for this Group are (703) 308-7764 for regular communications and (703) 305-3463 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
September 19, 2003



JOSIAH COCKS
PATENT EXAMINER
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